

§ 87.2

Turbojet engine means a gas turbine engine that is designed to create all of its propulsion from exhaust gases.

Turboprop engine means a gas turbine engine that is designed to create most of its propulsion from a propeller driven by a turbine, usually through a gearbox.

Turboshaft engine means a gas turbine engine that is designed to drive a rotor transmission system or a gas turbine engine not used for propulsion.

U.S.-registered aircraft means an aircraft that is on the U.S. Registry.

We (us, our) means the Administrator of the Environmental Protection Agency and any authorized representatives.

[77 FR 36379, June 18, 2012]

§ 87.2 Abbreviations.

The abbreviations used in this part have the following meanings:

% percent
° degree
CO carbon monoxide
CO₂ carbon dioxide
g gram
HC hydrocarbon(s)
kN kilonewton
kW kilowatt
LTO landing and takeoff
NO_x oxides of nitrogen
rO rated output
rPR rated pressure ratio
SN smoke number

[77 FR 36381, June 18, 2012]

§ 87.3 General applicability and requirements.

(a) The regulations of this part apply to engines on all aircraft that are required to be certificated by FAA under 14 CFR part 33 except as specified in this paragraph (a). These regulations do not apply to the following aircraft engines:

(1) Reciprocating engines (including engines used in ultralight aircraft).

(2) Turboshaft engines such as those used in helicopters.

(3) Engines used only in aircraft that are not airplanes. For purposes of this paragraph (a)(3), “airplane” means a fixed-wing aircraft that is heavier than air.

(4) Engines not used for propulsion.

(b) Under section 232 of the Act, the Secretary of Transportation issues reg-

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ulations to ensure compliance with the standards and related requirements of this part (42 U.S.C. 7572).

(c) The Secretary of Transportation shall apply these regulations to aircraft of foreign registry in a manner consistent with obligations assumed by the United States in any treaty, convention or agreement between the United States and any foreign country or foreign countries.

(d) No State or political subdivision of a State may adopt or attempt to enforce any aircraft or aircraft engine standard respecting emissions unless the standard is identical to a standard applicable to such aircraft under this part (including prior-tier standards applicable to exempt engines).

[77 FR 36381, June 18, 2012]

§ 87.4 [Reserved]

§ 87.6 Aircraft safety.

The provisions of this part will be revised if at any time the DOT Secretary determines that an emission standard cannot be met within the specified time without creating a hazard to aircraft safety.

[77 FR 36381, June 18, 2012]

§ 87.8 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Environmental Protection Agency must publish notice of change in the FEDERAL REGISTER and the material must be available to the public. All approved material is available for inspection at U.S. EPA, Air and Radiation Docket and Information Center, 1301 Constitution Ave. NW., Room B102, EPA West Building, Washington, DC 20460, (202) 202-1744, and is available from the sources listed below. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030 or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

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(b) International Civil Aviation Organization, Document Sales Unit, 999 University Street, Montreal, Quebec, Canada H3C 5H7, (514) 954-8022, www.icao.int, or sales@icao.int.

(1) Annex 16 to the Convention on International Civil Aviation, Environmental Protection, Volume II—Aircraft Engine Emissions, Third Edition, July 2008 (ICAO Annex 16). IBR approved for §§ 87.1, 87.42(c), and 87.60(a) and (b).

(2) [Reserved]

[77 FR 36381, June 18, 2012]

Subpart B—Engine Fuel Venting Emissions (New and In-Use Aircraft Gas Turbine Engines)

§ 87.10 Applicability.

(a) The provisions of this subpart are applicable to all new aircraft gas turbines of classes T3, T8, TSS and TF equal to or greater than 36 kilonewton rated output, manufactured on or after January 1, 1974, and to all in-use aircraft gas turbine engines of classes T3, T8, TSS and TF equal to or greater than 36 kilonewton rated output manufactured after February 1, 1974.

(b) The provisions of this subpart are also applicable to all new aircraft gas turbines of class TF less than 36 kilonewton rated output and class TP manufactured on or after January 1, 1975 and to all in-use aircraft gas turbines of class TF less than 36 kilonewton rated output and class TP manufactured after January 1, 1975.

[49 FR 41002, Oct. 18, 1984]

§ 87.11 Standard for fuel venting emissions.

(a) No fuel venting emissions shall be discharged into the atmosphere from any new or in-use aircraft gas turbine engine subject to the subpart. This paragraph is directed at the elimination of intentional discharge to the atmosphere of fuel drained from fuel nozzle manifolds after engines are shut down and does not apply to normal fuel seepage from shaft seals, joints, and fittings.

(b) Conformity with the standard set forth in paragraph (a) of this section shall be determined by inspection of

the method designed to eliminate these emissions.

Subpart C—Exhaust Emissions (New Aircraft Gas Turbine Engines)

§ 87.20 Applicability.

The provisions of this subpart are applicable to all aircraft gas turbine engines of the classes specified beginning on the dates specified.

§ 87.21 Exhaust emission standards for Tier 4 and earlier engines.

This section describes the emission standards that apply for Tier 4 and earlier engines that apply for aircraft engines manufactured before July 18, 2012 and certain engines exempted under § 87.50. Note that the tier of standards identified for an engine relates to NO_x emissions and that the specified standards for HC, CO, and smoke emissions apply independent of the changes to the NO_x emission standards.

(a) Exhaust emissions of smoke from each new aircraft gas turbine engine of class T8 manufactured on or after February 1, 1974, shall not exceed: Smoke number of 30.

(b) Exhaust emissions of smoke from each new aircraft gas turbine engine of class TF and of rated output of 129 kilonewtons thrust or greater, manufactured on or after January 1, 1976, shall not exceed:

$SN=83.6(r_0)^{-0.274}$ (r_0 is in kilonewtons).

(c) Exhaust emission of smoke from each new aircraft gas turbine engine of class T3 manufactured on or after January 1, 1978, shall not exceed: Smoke number of 25.

(d) Gaseous exhaust emissions from each new commercial aircraft gas turbine engine shall not exceed:

(1) Classes TF, T3, T8 engines greater than 26.7 kilonewtons rated output:

(i) Engines manufactured on or after January 1, 1984:

Hydrocarbons: 19.6 grams/kilonewton rO.

(ii) Engines manufactured on or after July 7, 1997.

Carbon Monoxide: 118 grams/kilonewton rO.